

Claim Amendments

Applicants have amended claims 1, 4, 6, 15, 18 and 20. Applicants set forth below a complete listing of the claims with the corresponding status indicated for each claim.

1. (Currently Amended) A method for mitigating defects caused by inoperative pixels in a liquid crystal micro-display built on a silicon integrated circuit substrate, the substrate having an integral complimentary metal-oxide semiconductor (CMOS) control chip containing CMOS drive circuitry, the drive circuitry comprising a plurality of pixel drive circuits, each pixel drive circuit electrically connected to a corresponding pixel, the method comprising:

identifying a defective pixel drive circuit electrically connected to an inoperative pixel;

disconnecting the electrical connection between the defective pixel drive circuit from and the inoperative pixel; and

electrically connecting the inoperative pixel to a working pixel drive circuit coupled to a nearby pixel such that the defective pixel drive circuit is bypassed and the inoperative pixel is driven from the working pixel drive circuit of the nearby pixel, the nearby pixel comprising one of an adjacent pixel or a non-adjacent pixel.

2-3. (Cancelled).

4. (Currently Amended) A method in accordance with claim 1, wherein electrically connecting comprises using a bypass bit latch comprising a bypass bit, and wherein the bypass bit is loaded from an external memory after the display is turned on.

5. (Previously Presented) A method in accordance with claim 1, further comprising: multiplexing the drive circuits of each pixel with the drive circuit of a nearby pixel.

6. (Currently Amended) A method in accordance with claim 1, wherein electrically connecting comprises using a bypass bit latch comprising a bypass bit, and wherein the method further comprises:

providing a tri-state transistor associated with each pixel which is connected to the bypass bit latch; and

providing a resistor for coupling neighboring pixels;

such that when the bypass bit is set, the transistor is switched to bypass the defective pixel drive circuit so that the inoperative pixel is driven from the working pixel drive circuit of a nearby pixel through the resistor.

7-10. (Cancelled).

11. (Previously Presented) A method in accordance with claim 1, wherein defects of the inoperative pixels are mitigated in groups.

12. (Previously Presented) A method in accordance with claim 1, wherein identifying defective pixel drive circuit further comprises providing test circuitry associated with the display.

13. (Original) A method in accordance with claim 1, wherein the pixel drive circuitry associated with each pixel is located separately from each pixel.

14. (Cancelled).

15. (Currently Amended) A liquid crystal micro-display apparatus capable of mitigating defects caused by inoperative pixels, comprising:

a plurality of pixels;

a complimentary metal-oxide semiconductor (CMOS) control chip integral to a silicon integrated circuit substrate of the micro display, the CMOS control chip comprising a plurality of pixel drive circuits, each pixel drive circuit electrically connected to a corresponding pixel,

means for disconnecting the electrical connection between the defective pixel drive circuit from and an inoperative pixel; and

a means for electrically connecting the inoperative pixel to a working pixel drive circuit of a nearby pixel, such that the defective pixel drive circuit is bypassed and the inoperative pixel is driven from the working pixel drive circuit of the nearby pixel, the nearby pixel comprising one of an adjacent pixel or a non-adjacent pixel.

16-17. (Cancelled).

18. (Currently Amended) Apparatus in accordance with claim 15, wherein the means for electrically connecting comprises a bypass bit latch comprising a bypass bit that is loaded from an external memory after the display is turned on.

19. (Previously Presented) Apparatus in accordance with claim 15, further comprising: multiplexing circuitry associated with the connecting means.

20. (Currently Amended) Apparatus in accordance with claim 15, wherein the means for electrically connecting comprises a bypass bit latch comprising a bypass bit, and wherein the apparatus further comprises:

a tri-state transistor associated with each pixel connected to the bypass bit latch; and

a resistor coupling neighboring pixels;

such that when the bypass bit is set, the transistor is switched to bypass the defective pixel drive circuit so that the inoperative pixel is driven from the working pixel drive circuit of a nearby pixel through the resistor.

21-24. (Cancelled).

25. (Previously Presented) Apparatus in accordance with claim 15, wherein defects of the inoperative pixels are mitigated in groups.

26. (Previously Presented) Apparatus in accordance with claim 15, further comprising test circuitry to identify the defective pixel drive circuit.

27. (Original) Apparatus in accordance with claim 15, wherein the pixel drive circuitry associated with each pixel is located separately from each pixel.

28. (Cancelled).

29. (Previously Presented) A method in accordance with claim 1, wherein the defective CMOS pixel drive circuit is identified after the CMOS control chip and the liquid crystal material are assembled together.

30. (Previously Presented) A method in accordance with claim 29, wherein the inoperative pixel is identified via an optical inspection of the display after assembly of the display.

31. (Previously Presented) Apparatus in accordance with claim 15, wherein the defective CMOS pixel drive circuit is identified after the CMOS control chip and the liquid crystal material are assembled together.

32. (Previously Presented) Apparatus in accordance with claim 31, wherein the inoperative pixel is identified via an optical inspection of the display after assembly of the display.